

6.2 Example B: Pure Thermal Problem

Sample Input File For A Thermal Load Problem

The following example is used to explain the control blocks in more detail.

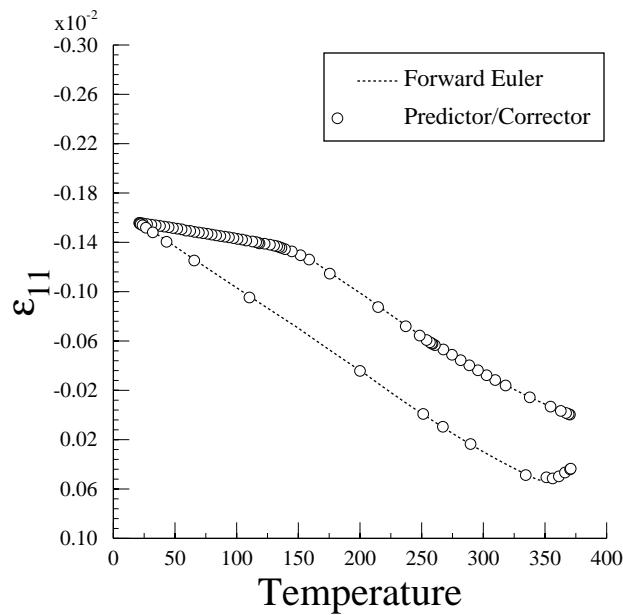
Problem Summary:

Load Type:	Thermal
Load History Data:	$\dot{T} = 0.01 \text{ } ^\circ\text{C/sec}$, $T_{max} = 371.1 \text{ } ^\circ\text{C}$ $T_{min} = 21.1 \text{ } ^\circ\text{C}$ $\Delta t_{initial} = 17.505 \text{ sec}$
Micromechanics model:	Double Periodicity
Fiber Packing Arrangement:	Square Pack at 35% fiber volume ratio
Integration Algorithm:	Predictor/Corrector
Constituent Material Model:	Bodner-Partom
Constituents:	Fiber: T50 Graphite Matrix: Aluminum (2024-T4)

☞ **Note:** This problem is taken from reference 1., pg. .238

```
cooldown heatup bodner model aboudi prob. pre/cor gmc2d
*PRINT
  NPL=0 %
*LOAD
  LCON=1 %
*THERM
  NPTT=3  TI=0.,35010.,70020. &
  TE=371.1,21.1,371.1 %
*MODEL
  MOD=1 %
*SOLVER
  NTF=2  ISTT=17.505  ERR=0.001 %
*FIBER
  NFIBS=1
  NF=1  MF=9  NDPT=2  MAT=A  D=1.,0.,0.%
*MATRIX
  NMATX=1
  NM=1  MM=1  NDPT=2  MAT=A  %
*MRVE
  IDP=1  VF=0.30 %
*CURVE
  NP=5 %
*MACRO
  NT=1
  NC=1  X=39  Y=1  NAM=apdxb %
*END
```

The following figure was obtained from the x-y plot data file produced by the present example.



☞ **Note:** It is recommended that a new user construct a mac input file using the data given in this Example and then check to see if the same result plot is obtained.